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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,504	07/12/2001	Masatoshi Deguchi	5350-103D1/10105921	3978

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EXAMINER

JOLLEY, KIRSTEN

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/905,504

Applicant(s)

DEGUCHI ET AL.

Examiner

Kirsten C Jolley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/312,542.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. The objection to the specification and the 35 USC 112, 2nd paragraph rejections have been withdrawn in response to Applicant's amendments.
2. Applicant's arguments filed July 28, 2003 have been fully considered but they are not persuasive.

Applicant argues and newly filed claims require that the supply mechanism is driven *at a supply rate prescribed for the selected process solution*, wherein the supply rate of each of the process solutions is prescribed to be such a value that the corresponding process solution applied in a predetermined total supply amount, while the substrate is rotated at a predetermined rotational speed, forms a process solution film having a uniform thickness on an entire surface of the substrate. While the Examiner stated in the personal interview of July 11, 2003 that the proposed amended claims appeared to be allowable over the prior art, upon further reconsideration, it is the Examiner's position that the claims remain rejected over Hasebe et al. Claims 26 and 32 require that "the supply rate of each of the process solutions is prescribed to be such a value that the corresponding process solution applied in a predetermined total supply amount." Supplying each of the resist solutions in "predetermined total supply amount[s]" is a broad limitation that is inclusive of any "predetermined" amount. The Examiner notes that Hasebe et al. teaches that the flow/supply rate of resist solution is critical, by stating that the supply amount of resist solution and supply time can be *accurately controlled* by controlling the disclosed supply steps singly or in combination

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(col. 5-6, specifically col. 5, lines 27-30). Further, the semiconductor manufacturing industry is a highly technical and exacting industry, where the reproducibility and control of process conditions is crucial. In industrial processes such as the semiconductor manufacturing industry, there would necessarily be forethought as to the amount of process solution that is applied -- the amount of resist solution applied would necessarily be predetermined and not chosen at random.

Hasebe et al. states at col. 17, lines 14-18, "each of the four resist solution supply nozzles 4a to 4d is connected to a corresponding one of tanks which contain different kinds of coating solutions, and a *predetermined* amount of coating solution can be sprayed from the nozzle for a *predetermined* period of time [emphasis added]". Also, Hasebe et al. disclosing apply a plurality of solvents to the substrate at different supply rates by stating "in order to supply different solvents from the respective nozzles, the nozzles may be connected to corresponding tanks, and the kinds of solvents or a *discharge sequence is selected*, thereby obtaining optimal coating conditions [emphasis added]" (col. 16, lines 22-26).

With respect to the rejections over Hasebe et al., Applicant argues that the Hasebe et al. reference does not pay any attention to an arrangement for selectively supplying different types of process solutions in a small total supply amount, and forming a process solution film having a uniform thickness. The Examiner notes that Hasebe et al. discloses an arrangement for selectively supplying different types of resist solutions in the embodiment described in Figures 21-25 and col. 15-17. Hasebe et al. discusses a desire to produce uniform coatings and use a small total supply amount in its Background section.

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Applicant also argues that Hasebe et al. has no suggestion about the constructed database according to the present invention. The Examiner notes that the use of a database is not claimed.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 26-28 and 31-34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hasebe et al. (US 5,658,615).

The claims remain rejected for the reasons discussed in the prior Office action, as well as for the reasons discussed above in section 2.

Claim Rejections - 35 USC § 103

6. Claims 29 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al.

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The claims remain rejected for the reasons discussed in the prior Office action, as well as for the reasons discussed above in section 2.

7. Claims 30 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al. as applied to claims 1-17 and 20-23 above, and further in view of Akimoto et al. (US 5,938,847).

The claims remain rejected for the reasons discussed in the prior Office action, as well as for the reasons discussed above in section 2.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takamori et al. (US 6,306,455) is cited for its teaching in col. 13, lines 29-47 of a process using a plurality of process solution nozzles whereby "the discharge amount from each of the nozzles can be arbitrarily controlled."

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

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advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C Jolley whose telephone number is 703-306-5461 before December 10, 2003, and will be 571-272-1421 after December 10, 2003.

The examiner can normally be reached on Monday to Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on 703-308-2333 before December 10, 2003 or 571-272-1415 after December 10, 2003. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193.

kcj 


SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
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